

Amendments to the claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (canceled)
2. (previously presented) A peptide according to claim 25, wherein said amino acid sequence is a nonapeptide.
3. (canceled)
4. (previously presented) A peptide according to claim 25, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A2.1.
5. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A2.1 and is selected from the group consisting of:

AMFQDPQER (residues 7-15 of HPV16 protein E6) SEQ ID NO:1

KLPQLCTEL (residues 18-26 of HPV16 protein E6) SEQ ID NO:2

QLCTELQTT (residues 21-29 of HPV16 protein E6) SEQ ID NO:3

LCTELQTTI (residues 22-30 of HPV16 protein E6) SEQ ID NO:4

ELQTTIHDI (residues 25-33 of HPV16 protein E6) SEQ ID NO:5
LQTTIHDII (residues 26-34 of HPV16 protein E6) SEQ ID NO:6
TIHDIILEC (residues 29-37 of HPV16 protein E6) SEQ ID NO:7
IHDIIILECV (residues 30-38 of HPV16 protein E6) SEQ ID NO:8
CVYCKQQLL (residues 37-45 of HPV16 protein E6) SEQ ID NO:9
FAFRDLCIV (residues 52-60 of HPV16 protein E6) SEQ ID NO:10
KISEYRHYC (residues 79-87 of HPV16 protein E6) SEQ ID NO:11
PLCDLLIRC (residues 102-110 of HPV16 protein E6) SEQ ID NO:12
TLHEYMLDL (residues 7-15 of HPV16 protein E7) SEQ ID NO:13
YMLDLQPET (residues 11-19 of HPV16 protein E7) SEQ ID NO:14
MLDLQPETT (residues 12-20 of HPV16 protein E7) SEQ ID NO:15
RLCVQSTHV (residues 66-74 of HPV16 protein E7) SEQ ID NO:16
TLEDLLMGT (residues 78-86 of HPV16 protein E7) SEQ ID NO:17
LLMGTLGIV (residues 82-90 of HPV16 protein E7) SEQ ID NO:18
GTLGIVCPI (residues 85-93 of HPV16 protein E7) SEQ ID NO:19
TLGIVCPIC (residues 86-94 of HPV16 protein E7) SEQ ID NO:20 and
a fragment, homolog, isoform, derivative, genetic variant or conservative
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-A2.1.

6. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV18, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A2.1 and is selected from the group consisting of:

KLPDLCTEL (residues 13-21 of HPV18 protein E6) SEQ ID NO:21
SLQDIEITC (residues 24-32 of HPV18 protein E6) SEQ ID NO:22

LQDIEITCV (residues 25-33 of HPV18 protein E6) SEQ ID NO:23
EITCVYCKT (residues 29-37 of HPV18 protein E6) SEQ ID NO:24
KTVLELTEV (residues 36-44 of HPV18 protein E6) SEQ ID NO:25
ELTEVFEFA (residues 40-48 of HPV18 protein E6) SEQ ID NO:26
FAFKDLFVV (residues 47-55 of HPV18 protein E6) SEQ ID NO:27
DTLEKLTNT (residues 88-96 of HPV18 protein E6) SEQ ID NO:28
LTNTGLYNL (residues 93-101 of HPV18 protein E6) SEQ ID NO:29
TLQDIVLHL (residues 7-15 of HPV18 protein E7) SEQ ID NO:30
FQQLFLNTL (residues 86-94 of HPV18 protein E7) SEQ ID NO:31
QLFLNTLSF (residues 88-96 of HPV18 protein E7) SEQ ID NO:32
LFLNTLSFV (residues 89-97 of HPV18 protein E7) SEQ ID NO:33
LSFVCPWCA (residues 94-102 of HPV18 protein E7) SEQ ID NO:34 and
a fragment, homolog, isoform, derivative, genetic variant or conservative
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-A2.1.

7. (previously presented) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A1.
8. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 and E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A1 and is selected from the group consisting of:

YRDGNPYAV (residues 61-69 of HPV16 protein E6) SEQ ID NO:35

WTGRCMSCC (residues 139-147 of HPV16 protein E6) SEQ ID NO:36

MSCCRSSRT (residues 144-152 of HPV16 protein E6) SEQ ID NO:37
TTDLICYEQ (residues 19-27 of HPV16 protein E7) SEQ ID NO:38
EIDGPAGQA (residues 37-45 of HPV16 protein E7) SEQ ID NO:39
HVDIRTLED (residues 73-81 of HPV16 protein E7) SEQ ID NO:40 and
~~a fragment, homolog, isoform, derivative, genetic variant or conservative~~
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-A3.2.

9. (previously presented) A peptide according to claim 25, wherein said amino acid sequence has the ability to bind to human to human MHC Class I allele HLA-A3.2.
10. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A3.2 and is selected from the group consisting of:

AMFQDPQER (residues 7-15 of HPV16 protein E6) SEQ ID NO:1
IILECVYCK (residues 33-41 of HPV16 protein E6) SEQ ID NO:41
CVYCKQQLL (residues 37-45 of HPV16 protein E6) SEQ ID NO:9
VYCKQQLLR (residues 38-46 of HPV16 protein E6) SEQ ID NO:42
QQLLRREVY (residues 42-50 of HPV16 protein E6) SEQ ID NO:43
IVYRDGNPY (residues 59-67 of HPV16 protein E6) SEQ ID NO:44
YAVCDKCLK (residues 67-75 of HPV16 protein E6) SEQ ID NO:45
AVCDKCLKF (residues 68-76 of HPV16 protein E6) SEQ ID NO:46
VCDKCLKFY (residues 69-77 of HPV16 protein E6) SEQ ID NO:47
KFYSKISEY (residues 75-83 of HPV16 protein E6) SEQ ID NO:48

KISEYRHYC (residues 79-87 of HPV16 protein E6) SEQ ID NO:11
ISEYRHYCY (residues 80-88 of HPV16 protein E6) SEQ ID NO:49
RHYCYSLYG (residues 84-92 of HPV16 protein E6) SEQ ID NO:50
SLYGTTLEQ (residues 89-97 of HPV16 protein E6) SEQ ID NO:51
TTLEQQYNK (residues 93-101 of HPV16 protein E6) SEQ ID NO:52
QQYNKPLCD (residues 97-105 of HPV16 protein E6) SEQ ID NO:53
LIRCINCQK (residues 107-115 of HPV16 protein E6) SEQ ID NO:54
HLDKKQRFH (residues 125-133 of HPV16 protein E6) SEQ ID NO:55
CMSCCRSSR (residues 143-151 of HPV16 protein E6) SEQ ID NO:56
SCCRSSRTR (residues 145-153 of HPV16 protein E6) SEQ ID NO:57
CCRSSRTRR (residues 146-154 of HPV16 protein E6) SEQ ID NO:58
HYNIVTFCC (residues 51-59 of HPV16 protein E7) SEQ ID NO:59
YNIVTFCK (residues 52-60 of HPV16 protein E7) SEQ ID NO:60
CCKCDSTLR (residues 58-66 of HPV16 protein E7) SEQ ID NO:61
KCDSTLRLC (residues 60-68 of HPV16 protein E7) SEQ ID NO:62 and
a fragment, homolog, isoform, derivative, genetic variant or conservative
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-AII.2.

11. (previously presented) A peptide according to claim 25, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-AII.2.
12. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-AII.2 and is selected from the group consisting of:

AMFQDPQER (residues 7-15 of HPV16 protein E6) SEQ ID NO:1
IILECVYCK (residues 33-41 of HPV16 protein E6) SEQ ID NO:41
CVYCKQQLL (residues 37-45 of HPV16 protein E6) SEQ ID NO:9
VYCKQQLLR (residues 38-46 of HPV16 protein E6) SEQ ID NO:42
QQLLRREVY (residues 42-50 of HPV16 protein E6) SEQ ID NO:43
IVYRDGNPY (residues 59-67 of HPV16 protein E6) SEQ ID NO:44
YAVCDKCLK (residues 67-75 of HPV16 protein E6) SEQ ID NO:45
AVCDKCLKF (residues 68-76 of HPV16 protein E6) SEQ ID NO:46
VCDKCLKFY (residues 69-77 of HPV16 protein E6) SEQ ID NO:47
KISEYRHYC (residues 79-87 of HPV16 protein E6) SEQ ID NO:11
ISEYRHYCY (residues 80-88 of HPV16 protein E6) SEQ ID NO:49
LIRCINCQK (residues 107-115 of HPV16 protein E6) SEQ ID NO:54
TGRCMSCCR (residues 140-148 of HPV16 protein E6) SEQ ID NO:63
CMSCCRSSR (residues 143-151 of HPV16 protein E6) SEQ ID NO:56
SCCRSSRTR (residues 145-153 of HPV16 protein E6) SEQ ID NO:57
HYNIVTFCC (residues 51-59 of HPV16 protein E7) SEQ ID NO:59
YNIVTFCKK (residues 52-60 of HPV16 protein E7) SEQ ID NO:60
CCKCDSTLR (residues 58-66 of HPV16 protein E7) SEQ ID NO:61
VCPICSQKP (residues 90-98 of HPV16 protein E7) SEQ ID NO:64 and
a ~~fragment, homolog, isoform, derivative, genetic variant or conservative~~
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-A11.2.

13. (previously presented) A peptide according to claim 25, wherein said amino acid sequence to bind to human MHC Class I allele HLA-A24.

14. (amended) A peptide according to claim 25, comprising an amino acid sequence derived from protein E6 or E7 of HPV16, wherein said amino acid sequence has the ability to bind to human MHC Class I allele HLA-A24 and is selected from the group consisting of:

MHQKRTAMF (residues 1-9 of HPV16 protein E6) SEQ ID NO:65
LQTTIHDII (residues 26-34 of HPV16 protein E6) SEQ ID NO:6
VYCKQQLLR (residues 38-46 of HPV16 protein E6) SEQ ID NO:42
LLRREVVYDF (residues 44-52 of HPV16 protein E6) SEQ ID NO:66
VYDFAFRDL (residues 49-57 of HPV16 protein E6) SEQ ID NO:67
PYAVCDKCL (residues 66-74 of HPV16 protein E6) SEQ ID NO:68
KCLKFYSKI (residues 72-80 of HPV16 protein E6) SEQ ID NO:69
EYRHICYSL (residues 82-90 of HPV16 protein E6) SEQ ID NO:70
HYCYSLYGT (residues 85-93 of HPV16 protein E6) SEQ ID NO:71
CYSLYGTTL (residues 87-95 of HPV16 protein E6) SEQ ID NO:72
RFHNIRGRW (residues 131-139 of HPV16 protein E6) SEQ ID NO:73
RAHYNIVTF (residues 49-57 of HPV16 protein E7) SEQ ID NO:74 and
a ~~fragment, homolog, isoform, derivative, genetic variant or conservative~~
variant of any one of these amino acid sequences differing by one
conservative amino acid substitution which has the ability to bind to
human MHC Class I allele HLA-A24.

15. (previously presented) A peptide according to claim 25, having a length of from 9 to 12 amino acids.
16. (amended) A pharmaceutical composition containing a ~~prophylactically or therapeutically~~ an effective amount for eliciting cellular immune response of a

Applicants: Wybe Martin Kast et al.
Serial No.: 08/170,344
Filed: March 30, 1994
Page 9

peptide according to claim 25, and a pharmaceutically acceptable carrier, diluent, excipient or adjuvant.

17-24. (canceled)

25. (previously presented) A peptide comprising an amino acid sequence derived from protein of human papilloma virus (HPV), wherein said amino acid sequence comprises a nonapeptide derived from protein E6 or E7 of HPV or HPV 18 and wherein said nonapeptide has the ability to bind in the grooves on top of the human major histocompatibility complex (MHC) Class I molecule.